

REMARKS/ARGUMENTS

The Applicant has carefully considered this application in connection with the Examiner's Action and respectfully requests reconsideration of the application in view of the foregoing amendment and the following remarks. The Applicant originally submitted Claims 1-20 in the application. The Applicant canceled Claims 1-10 and has not amended or added any claims. Accordingly, Claims 11-20 are currently pending in the application.

I. Formal Matters and Objections

The Examiner has objected to FIGURES 1, 2 and 3 as not being labeled prior art. The Applicant has, contemporaneously herewith, submitted a drawing amendment wherein FIGURES 1 and 2 are labeled as prior art. The Applicant does not agree that FIGURE 3 is prior art as contemplated under the MPEP. It is merely an illustration of a problem that the present invention solves. The Applicant has no knowledge of any prior art that would increase data rate utilizing pulse position modulation as illustrated in FIGURE 3.

II. Rejection of Claims 1-10 under 35 U.S.C. §101

The Examiner has rejected Claims 1-10 under 35 U.S.C. §101. In the interest of facilitating prosecution of this application, the Applicant hereby cancels Claims 1-10.

III. Rejection of Claim 4 and 14 under 35 U.S.C. §112

The Examiner rejected Claims 4 and 14 under 35 U.S.C. §112, first paragraph. The Applicant canceled Claim 4. With respect to Claim 14, the Examiner asserts that "... it contains

subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.” (Office Action - Page 3, para 6). The Examiner states that the specification does not disclose in a way so as to understand what is meant that “time slots” are not adjacent and that the specification does not disclose non-adjacent “time slots.” The Applicant respectfully suggests that a person of ordinary skill in the pertinent art will perfect understand what is meant by the terms adjacent and non-adjacent time slots. Logically, if a person of ordinary skill in the pertinent art is addressing a signal that involves “adjacent” time slots, he or she would understand what a “non-adjacent” time slot is and would recognize a non-adjacent time slot when presented. The Applicant respectfully requests the Examiner to withdraw the objection to Claim 14.

IV. Rejection of Claims 1-20 under 35 U.S.C. §103

The Examiner has rejected Claims 1-20 under 35 U.S.C. §103(a). The Applicant has canceled Claims 1-10. With respect to Claims 11-20, as the Examiner is no doubt aware, determination of obviousness requires consideration of the invention considered as a whole; the inquiry is not whether each element exists in the prior art, but whether the prior art made obvious the invention as a whole. Furthermore, there must be some suggestion or teaching in the art that would motivate one of ordinary skill in the art to arrive at the claimed invention; a reference that teaches away from a claimed invention strongly indicates nonobviousness.

Moreover, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to

combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on Applicant's disclosure.

The Examiner notes that the "... AAPA does not disclose designating a period of time spanned by a pulse, and said period of time divided into time slots and each of the time slots having a unique phase and causing said pulse to encode a data element by said phase position." The Applicant suggests that a more correct statement would be that the AAPA does not disclose a period of time spanned by a pulse, said period of time spanned by said pulse divided into time slots and each of the time slots having a unique *phase/time* position and causing said pulse to encode data by said *phase/time* position.

Hirt does not, in combination with the AAPA, suggest or teach the present invention. Hirt describes a wireless communication system that is, for all intents and purposes, a pulse position modulation system. Hirt describes a method of overlaying frequency shift keying on a pulse position modulation system so as to provide the robustness of a pulse position system with the data carrying capacity of a frequency shift keying system in an infrared environment. Hirt describes the addition of frequency to pulses in order to make the pulse positions more readily ascertainable when decoded in an IR environment. Hirt does not suggest or teach that a single pulse can be divided into time slots with each slot having a unique phase/time position and that a pulse can be used to encode data by said phase/time position. Hirt essentially teaches pulse position modulation where multiple pulses are transmitted and the pulse positions ascertained because the optical intensity has been increased by the addition of frequency shift keying to shape the multiple pulses within each the

respective position of each pulse. (Col. 4, lines 45-67; Col. 5, lines 1-35). Thus, the AAPA combined with Hirt does not teach or suggest the present invention, nor is the present invention rendered obvious by the AAPA and Hirt.

The Examiner rejected Claim 18 under 35 U.S.C. §103(a) as being unpatentable over the AAPA in view of Hirt and further in view of U.S. Patent No. 4,677,656 to Burke, *et al.* As noted with respect to Claim 11, on which Claim 18 is dependent, the AAPA and Hirt do not, individually or in combination, teach or suggest a period of time spanned by a pulse, said period of time spanned by a pulse that is divided into time slots where each of the time slots has a unique phase/time position and each pulse encodes data by such phase/time position. Burke does not address the shortcomings of the AAPA and Hirt with respect to Claim 11. Therefore, Claim 18 is not obvious inasmuch as it incorporates the limitations of independent Claim 11.

The Examiner rejected Claim 14 under 35 U.S.C. §103(a) as being unpatentable over the AAPA in view of Hirt and further in view of U.S. Patent No. 3,742,498 to Dunn. Again, as noted with respect to Claim 11, on which Claim 14 is dependent, the AAPA and Hirt do not, individually or in combination, teach or suggest a period of time spanned by a pulse, said period of time spanned by a pulse that is divided into time slots where each of the time slots has a unique phase/time position and each pulse encodes data by such phase/time position. Dunn does not address the shortcomings of the AAPA and Hirt with respect to Claim 11. Therefore, Claim 14 is not obvious inasmuch as it incorporates the limitations of independent Claim 11.

The Examiner has rejected Claim 15 under 35 U.S.C. §103(a) as being unpatentable over the AAPA in view of Hirt and further in view of U.S. Patent No. 6,064,662 Gitlin, *et al.*(Gitlin). Again, as noted with respect to Claim 11, on which Claim 15 is dependent, the AAPA and Hirt do

not, individually or in combination, teach or suggest a period of time spanned by a pulse, said period of time spanned by a pulse that is divided into time slots where each of the time slots has a unique phase/time position and each pulse encodes data by such phase/time position. Gitlin does not address the shortcomings of the AAPA and Hirt with respect to Claim 11. Therefore, Claim 15 is not obvious inasmuch as it incorporates the limitations of independent Claim 11 on which it is dependent.

The Examiner has rejected Claims 19 and 20 under 35 U.S.C. §103(a) as being unpatentable over the AAPA in view of Hirt and further in view of Burke and Gitlin. As previously noted, the AAPA and Hirt do not, individually or in combination, teach or suggest the limitations of independent Claim 11, on which Claims 19 and 20 depend. There is no teaching or suggestion in the AAPA or Hirt that a period of time spanned by a pulse can be divided into a group of time slots, each having a unique phase/time position and that the pulse can be used to encode a data element by such phase/time position. As previously noted, neither Burke nor Gitlin address the shortcomings of the AAPA and Hirt with respect to independent Claim 11. Therefore, Claims 19 and 20 are not obvious because each claim includes the limitations of its parent claim.

In view of the foregoing remarks, the cited references do not support the Examiner's rejection of Claims 11-20 under 35 U.S.C. §103(a). The Applicant therefore respectfully requests the Examiner to withdraw the rejection.

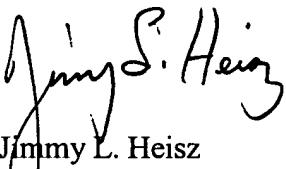
IV. Conclusion

In view of the foregoing amendment and remarks, the Applicant now sees all of the claims currently pending in this application to be in condition for allowance and therefore earnestly solicits a Notice of Allowance for Claims 11-20.

The Applicant requests the Examiner to telephone the undersigned attorney of record at (972) 480-8800 if such would further or expedite the prosecution of the present application.

Respectfully submitted,

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